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NOTES ON GEOGRAPHIC DISTRIBUTION

New records of *Flaviporus hydrophilus* and *Phellinus portoricensis* (Fungi: Polypores)

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ABSTRACT: *Flaviporus hydrophilus* and *Phellinus portoricensis*, collected in the Parque Municipal do Morro do Finder, are reported as new records for the Atlantic Rain Forest of Santa Catarina state and for Southern Brazil, respectively. Descriptions, illustrations and notes on distribution of these species are presented.

Diversity of polypores and related fungi from the Atlantic Rain Forest biome has been recorded by several authors and many new taxa have been proposed (*p. ex.* Loguercio-Leite *et al*. 2002, Ryvarden and de Meijer 2002, Drechsler-Santos *et al*. 2008b, Baltazar *et al*. 2009). Compilation of literature records provided by Baltazar and Gibertoni (2009) presents a list of 733 species of aphyllophoroid fungi in 47 families, out of which 50% are polypores. Particularly in Santa Catarina state, Dr. Clarice Loguercio-Leite and her students (Drechsler-Santos *et al*. 2008a and references therein) have made the most important contribution to macrofungal diversity knowledge. Recently, Loguercio-Leite *et al*. (2009) reported 237 macrofungi species (33 Ascomycota and 204 Basidiomycota), mainly based on collections from the coastal Atlantic Rain Forest biome.

During a study (2009 and 2010) carried out in an urban reserve of dense ombrophilous forest (Parque Municipal Morro do Finder, covering around 442,600 m^2 of Joinville municipality, with variable elevation between 35 - 195 m), characterized by the presence of well-developed trees, palms, shrubs and epiphytes, 21 polypore species were collected and two of them deserved taxonomic and biogeographic attention. *Flaviporus hydrophilus* (Berk. and M.A. Curtis) Ginns is characterized by dense basidioma, small pores, resinuous-like context, dimitic hyphal system and tiny spores. This species has been reported for the Atlantic Rain Forest biome in Alagoas, São Paulo and Paraná states (Baltazar and Gibertoni 2009). *Phellinus portoricensis* (Overh.) M. Fidalgo is a hymenochaetoid species characterized mainly by the large setal hyphae in the context. The presence of hymenial setae, black line in the context and yellowish to pale rusty brown subglobose basidiospores are good additional characters to identify the species, which has been recorded for the Atlantic Rain Forest and Caatinga biomes of northeast Brazil (Baltazar and Gibertoni 2009).

Microscopic examination was achieved from freehand sections of specimens mounted in Melzer's reagent to determine the presence (dextrinoid or amyloid) or absence of reaction.

All microscopic measurements (n = 40) and basidiospore drawings were made in KOH 5% with 1% aqueous phloxine solution. The arithmetic mean of all measurements from studied material is given in the description. The specimens were deposited in the FLOR Herbarium of UFSC (Holmgren and Holmgren 1998). The collecting was authorized by Fundação Municipal do Meio Ambiente (FUNDEMA).

Flaviporus hydrophilus (Berk. and M.A. Curtis) Ginns, Can. J. Bot. 58(14): 1583 (1980) (Figure 1)

(Meruliaceae, Polyporales)

Basidioma annual, spatulate to centrally substipitate,

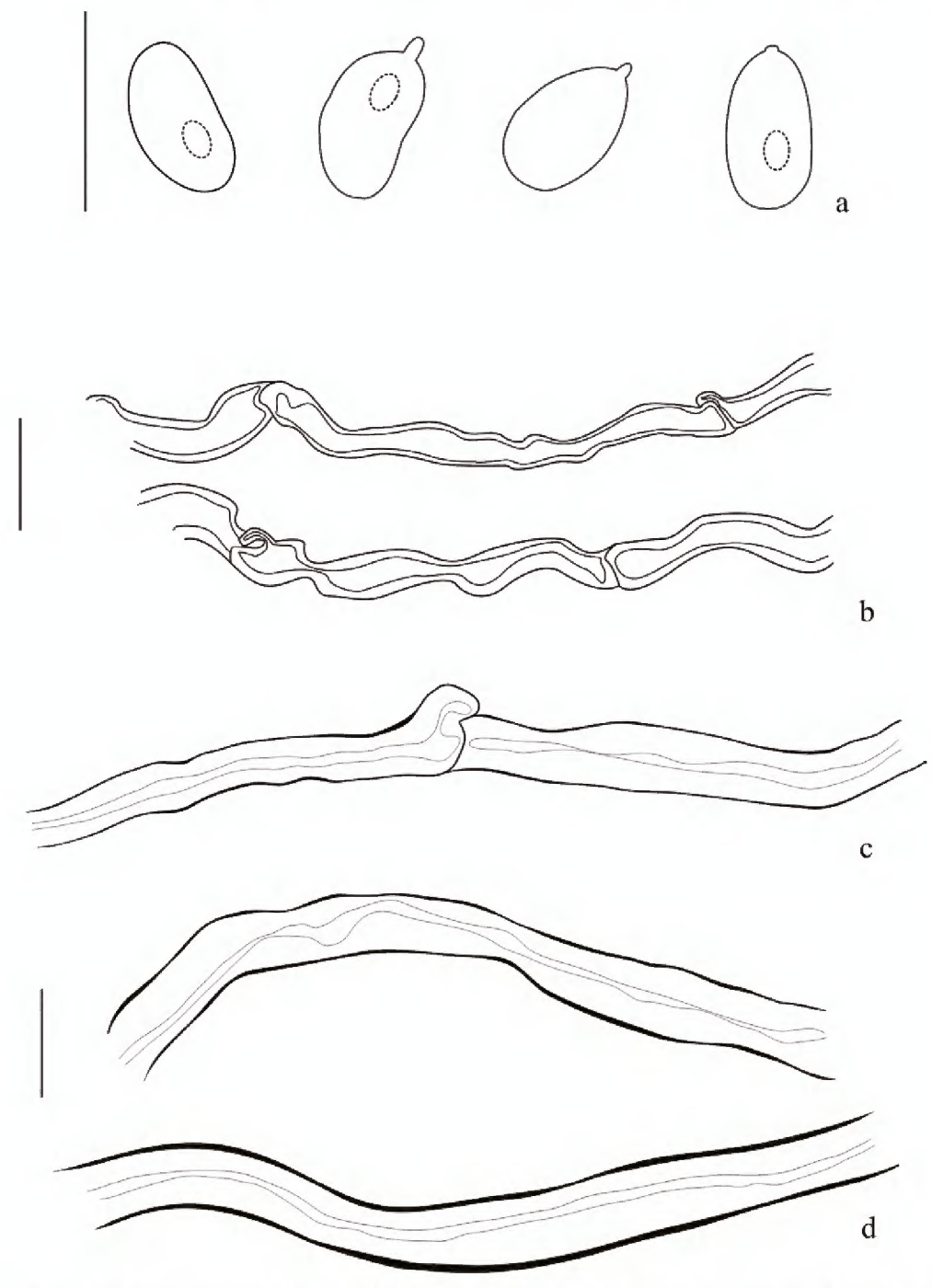

FIGURE 1. *Flaviporus hydrophilus*. a. Basidiospores; b. Generative hyphae from trama. c. Swollen generative hyphae from context. d. Skeletal hyphae from context (scale bar = a: 5µm; b-d: 10µm).

margin thin and sharp, slightly lacerated to lobed, curled when dry, 45 mm at longest diameter, upper surface buff to ochraceous, finely tomentose in narrow zones which become glabrous and darker when dry; pore surface whitish, dense and cartilaginous when fresh, becoming ochraceous when dried; pores tiny, almost invisible to the naked eye, 7-9 per mm, angular, irregular; tubes dense and concolorous, 0,5 to 1 mm deep; context buff, up to 2 mm thick, with waxy dark streaks through the context, becoming a dense dark layer, which upon ageing is exposed as a cuticle on the pileus.

Hyphal system dimitic; generative hyphae in the trama and near the tubes, generally simple-septate, with inflated septa, sometimes with clamps, pale yellow, thick-walled, unbranched or rarely branched, (1.5-)2-3 µm diam.; generative hyphae in context pale yellow, agglutinated, thick-walled, swollen, simple-septate, sometimes clamped, (5-) 6-8µm diam., in the waxy dark streaks, they are strongly agglutinated and very difficult to distinguish; skeletal hyphae agglutinated, difficult to observe in the trama. Basidia broadly ellipsoid, 10-14 x 5-6 µm, 4-sterigmate, simple-septate at the base. Basidiospores ellipsoid, 2-4 x 2-2.5 µm, often slightly adaxially flattened becoming almost drop-shaped, hyaline to pale yellow, smooth and thin-walled, negative in Melzer's reagent, with eccentric droplets.

Material examined: Brazil, Santa Catarina, Joinville, Parque Municipal Morro do Finder, 29-IV-2010, M.A. Borba-Silva 056 (FLOR42728).

Notes on distribution: *Flaviporus hydrophilus* is a neotropical species (Ginns 1980) and was reported for the Brazilian Atlantic Rain Forest in the states of Alagoas, Paraná, Pernambuco and São Paulo (Baltazar and Gibertoni 2009, Baltazar *et al.* 2012). The material collected by us represents the first record of this species for the Santa Catarina state (Figure 2). The morphology of *F. hydrophilus* seems to be very variable and the taxon should be taxonomic revised.

Phellinus portoricensis (Overh.) M. Fidalgo, Mem. N. Y. bot. Gdn 17: 111 (1968) (Figure 3)

(Hymenochaetales, Hymenochaetaceae)

Basidioma perennial, pileate, sessile, applanate to effused reflexed, 90 x 50 x 20 mm; woody hard when dry. Pileus persistently velutinate in narrow sulcate zones, reddish-brown, some of the older zones becoming black with age, as a crust exposed, which otherwise is seen in section below the reddish-brown tomentum; margin entire, obtuse and pale brown. Pore surface chocolate brown to dark umber, sometimes grayish dark; pores tiny, almost invisible to the naked eye, 7-9 mm, round to slightly angular; tubes up to 6.5 mm, paler than pore surface, mostly distinctly stratified with intermittent layers of brown to dark context. Context dense, yellowish to reddish-brown, up to 5 mm thick, duplex by the presence of dark line or points; sometimes the dark line becomes a crust in old and weathered parts of the pilear cover by loss of tomentum.

Hyphal system dimitic; generative hyphae thin-walled, 1.4-3.0 µm wide, simple septate; skeletal hyphae dominating in the context and dissepiments, thick-walled, yellow to pale rusty brown, 2.5-4.5 µm wide. Setal hyphae present, 15-35 µm wide, up to 500 µm long, acute thick-walled to solid and dark rusty brown, in the trama running parallel to the tubes, and some of them projecting obliquely into the hymenium and somewhat above it. Hymenial setae present, sometimes ventricose, acute, dark brown and thick-walled, 20-70 x 8-15 µm. Basidiospores subglobose, 4.5-5(-5.5) x 3-4 µm, slightly thick-walled, first yellowish, with age pale rusty brown, IKI -.

Material examined: Brazil, Santa Catarina, Joinville, Parque Municipal Morro do Finder, 13-I-2009, M.A. Borba-Silva 057 (FLOR42729).

Additional material examined: Brazil, Rio Grande do Sul, Tenente Portela, Parque Estadual do Turvo, 15-VIII-1976, M.A. Souza (ICN006533, as *Phellinus portoricensis*), on living tree of canela loura.

Notes on distribution: *Phellinus portoricensis* is a neotropical species [Baltazar and Gibertoni 2010 as *Inonotus portoricensis* (Overh.) Baltazar and Gibertoni]. In Brazil, it was recorded for the Atlantic Rain Forest only for Alagoas state (Gibertoni *et al.* 2004, 2007), and for the damp enclave forest in the semi-arid region of Bahia state (Góes-Neto *et al.* 2003). Recently, the Fungi Flora of Brazil cited the occurrence of this species for the Rio Grande do Sul state (Gibertoni *et al.* 2013), however, the morphological analysis of this material (ICN006533) revealed that it corresponds to the taxonomic complex of *Inonotus linteus* (Berk.) Teixeira (Tian et al. 2013). The absence of setal hyphae and the size of pores (4-6 mm) are distinctive when compared with *P. portoricensis* (Fidalgo 1986). In this case, the material studied by us represents the first record of *P. portoricensis* for Southern Brazil (Figure 2).

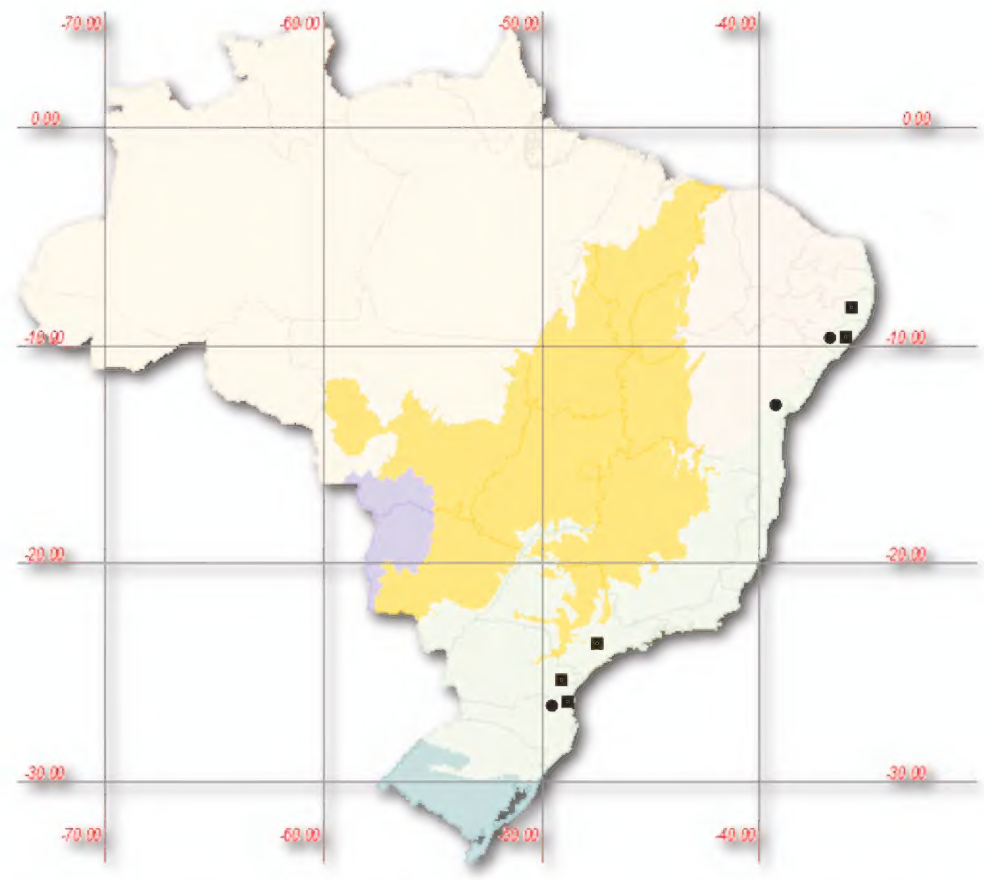

FIGURE 2. Map of Brazilian geographic distribution of *Flaviporus hydrophilus* (■) and *Phellinus portoricensis* (●). (Modified from speciesLink, http://www.splink.org.br).

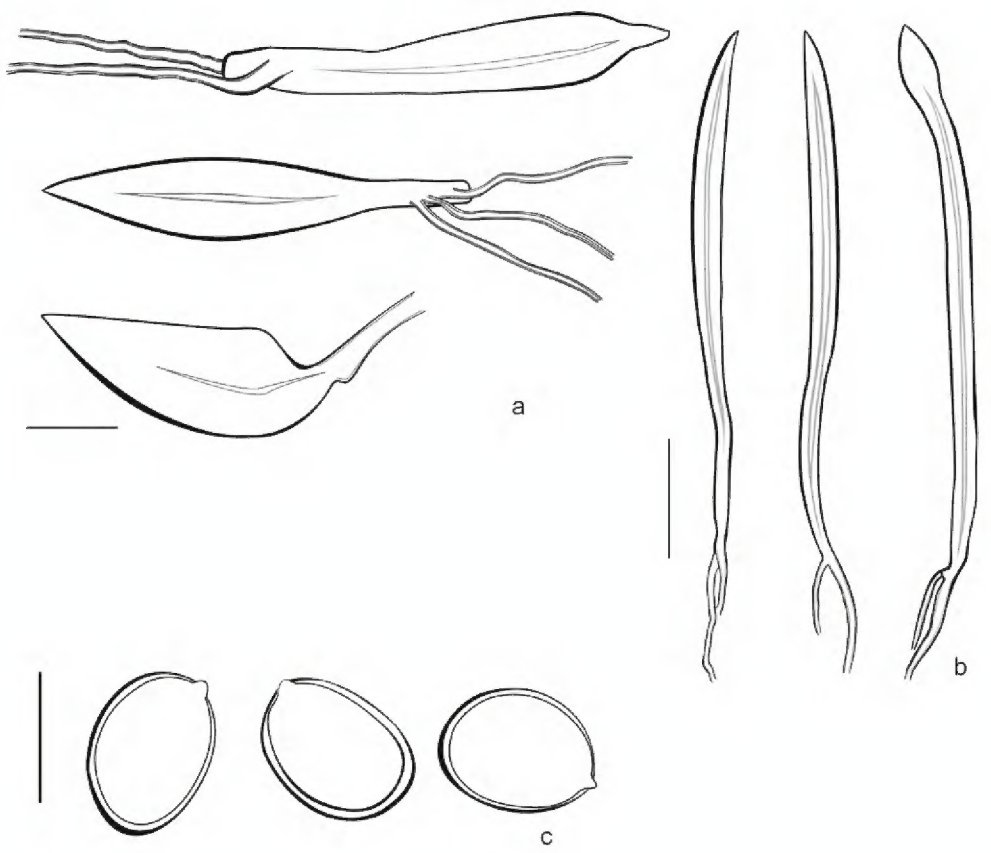

Figure 3. *Phellinus portoricensis*. a. Hymenial setae; b. Setal hyphae; c. Basidiospores; d. Skeletal hyphae – (scale bar = a and d: 10μm; b: 100μm; c: 5μm).

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